Supplemental Document

Biomedical Optics EXPRESS

Anti-HER2 PLGA-PEG polymer nanoparticle containing gold nanorods and paclitaxel for laser-activated breast cancer detection and therapy: supplement

YANJIE WANG,[1,2,3] MAURICE PASTERNAK,[4] KRISHNAN SATHIYAMOORTHY,[1,2,3] AND MICHAEL C. KOLIOS[1,2,3,*]

[1] *Physics Department, Ryerson University, 350 Victoria St., Toronto, Ontario M5B 2K3, Canada*
[2] *Institute for Biomedical Engineering, Science and Technology (iBEST), a partnership between Ryerson University and St. Michael's Hospital, 30 Bond St., Toronto, Ontario, M5B 1T8, Canada*
[3] *Keenan Research Centre for Biomedical Science of St. Michael's Hospital, 30 Bond St., Toronto, Ontario, M5B 1T8, Canada*
[4] *Biological Sciences Department, Sunnybrook Research Institute, 2075 Bayview Ave., Toronto, Ontario, M4N 3M5, Canada*
[*] *mkolios@ryerson.ca*

Supplement DOI: https://doi.org/10.6084/m9.figshare.14233625

Parent Article DOI: https://doi.org/10.1364/BOE.419252

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In this study, the PLGA particles were conjugated with fluorescent dye DiI, and the cell membrane was stained with a fluorescent dye DiO. Using confocal laser scanning fluorescence microscopy, we can acquire cross-section images at different depth (z-direction), and we can see the location of the particle either in the cytoplasm or on the cell membrane (Figure S1). The mechanism of active targeting is that, the particle first binds to the HER2 receptor on the cell surface and then internalized by the cell. The binding occurs at as early as 30-minutes incubation time, and it also shorten the internalization process. For imaging purpose, even if the particle attaches to the cell surface, it would sufficiently locate the cell. But for killing cell through particle vaporization, particle should be inside the cell to cause damage to cell membrane and other internal structures, and further cause cell death.

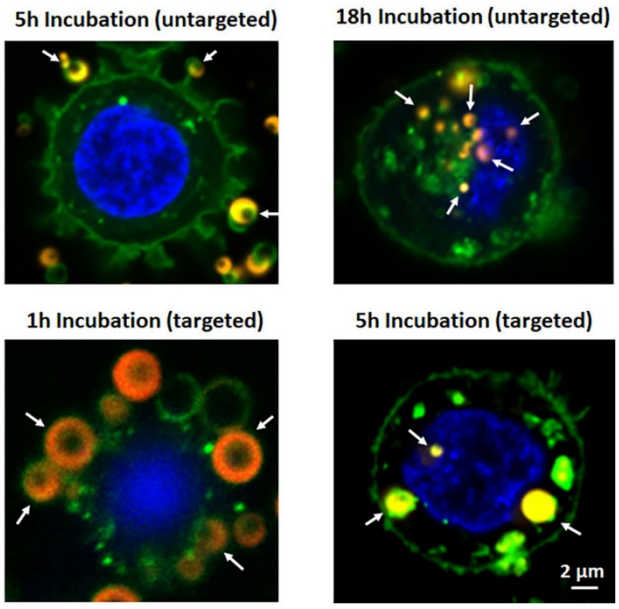

Fig. S1. The cross-section of confocal laser scanning fluorescence images of cancer cells containing targeted/untargeted PLGA particles recorded at different incubation time points. Cell nuclei were stained with Hoechst shown in blue. Cell membrane was stained with DiO shown in green. PLGA particles were conjugated with DiI shown in yellow/orange.